

AMENDMENTS TO THE CLAIMS:

32. (previously presented) An article of manufacture comprising:
a metallic substrate;
a thermal barrier coating disposed on the metallic substrate;
wherein the thermal barrier coating comprises a spinel material and an oxide material admixed to the spinel material, the oxide material selected from the group of MgO, HfO₂, NiO, CoO, and Cr₂O₃.

33. (currently amended) The article of manufacture of claim 32, wherein the spinel material is selected from the group of CoMg₂O₄, CoFe₂O₄, CoCr₂O₄, CoTi₂O₄, CoAl₂O₄, NiMg₂O₄, NiTi₂O₄, TiMg₂O₄, TiFe₂O₄, TiCr₂O₄, ~~TiTi₂O₄~~, and TiAl₂O₄.

34. (previously presented) The article of manufacture of claim 32, wherein a first portion of the thermal barrier coating comprises a normal spinel material and a second portion of the thermal barrier coating comprises an inverse spinel material.

35. (currently amended) An article of manufacture comprising:
a metallic substrate;
a thermal barrier coating disposed on the metallic substrate;
wherein the thermal barrier coating comprises a spinel material selected from the group of CoMg₂O₄, CoFe₂O₄, CoCr₂O₄, CoTi₂O₄, CoAl₂O₄, NiMg₂O₄, NiTi₂O₄, TiMg₂O₄, TiFe₂O₄, TiCr₂O₄, ~~TiTi₂O₄~~, and TiAl₂O₄.

36. (previously presented) The article of manufacture of claim 35, further comprising an oxide material admixed to the spinel material, the oxide material selected from the group of MgO, HfO₂, NiO, CoO, and Cr₂O₃.

37. (previously presented) An article of manufacture comprising:
a metallic substrate;
a thermal barrier coating disposed on the metallic substrate;
wherein a first portion of the thermal barrier coating comprises a normal spinel material and a second portion of the thermal barrier coating comprises an inverse spinel material.

38. (currently amended) The article of manufacture of claim 32,
wherein the spinel material is present as a mixture of the type $AB_2X_4-AX-B_2X_3$,
where

X represents an element or several elements of the group comprising oxygen, sulfur, selenium and tellurium.

A represents an element or several elements of the group comprising aluminum, manganese, iron, cobalt, nickel, copper, zinc, cadmium, silicon, titanium and tungsten, and

B represents an element or several elements of the group comprising aluminum, magnesium, manganese, iron, vanadium, chromium, gallium, silicon, titanium, sodium and potassium.

39. (currently amended) The article of manufacture of claim 35,
wherein the spinel material is present as a mixture of the type $AB_2X_4-AX-B_2X_3$,
where

X represents an element or several elements of the group comprising oxygen, sulfur, selenium and tellurium.

A represents an element or several elements of the group comprising aluminum, manganese, iron, cobalt, nickel, copper, zinc, cadmium, silicon, titanium and tungsten, and

B represents an element or several elements of the group comprising aluminum, magnesium, manganese, iron, vanadium, chromium, gallium, silicon, titanium, sodium and potassium.

40. (currently amended) The article of manufacture of claim 37, wherein the thermal barrier coating comprises a spinel material present as a mixture of the type $AB_2X_4-AX-B_2X_3$, where

X represents an element or several elements of the group comprising oxygen, sulfur, selenium and tellurium.

A represents an element or several elements of the group comprising aluminum, manganese, iron, cobalt, nickel, copper, zinc, cadmium, silicon, titanium and tungsten, and

B represents an element or several elements of the group comprising aluminum, magnesium, manganese, iron, vanadium, chromium, gallium, silicon, titanium, sodium and potassium.